GAMING MACHINE SYSTEM USING VIRTUAL TICKETS

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A method is taught to determine revenues of gaming devices using virtual tickets. A population of virtual tickets is generated at a data recording station, each virtual ticket identifying an outcome of a single play of a game. The virtual tickets are distributed to gaming devices, where one virtual ticket is consumed for each play. The play status information is recorded in association with the population as the virtual tickets are consumed. The play status information is then evaluated to determine the revenues of the gaming devices and an output representing these revenues is generated.

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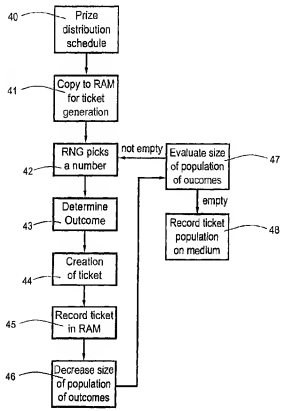

(57) **Abstract:** A method is taught to determine revenues of gaming devices using virtual tickets. A population of virtual tickets is generated at a data recording station, each virtual ticket identifying an outcome of a single play of a game. The virtual tickets are distributed to gaming devices, where one virtual ticket is consumed for each play. The play status information is recorded in association with the population as the virtual tickets are consumed. The play status information is then evaluated to determine the revenues of the gaming devices and an output representing these revenues is generated.

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GAMING MACHINE SYSTEM USING VIRTUAL TICKETS

CROSS-REFERENCE TO RELATED APPLICATIONS

The present patent application is a continuation for the United Stated of America of the US provisional patent application number 60/218,159 filed July 14th, 2000 having the title *Data Storage Device And Method Of Using It With Wagering Games*. Additionally, it is also a continuation of the US provisional patent application number 60/218,160 filed July 14th, 2000 having the title *Method Of According A Jackpot Common For Multiple Games*. Furthermore, it is also a continuation-in-part of patent application number 09/742,305 filed December 22nd, 2000 having the title *Ticket Manufacturing Device For Distribution Of Virtual Tickets Into A gaming Environment*.

FIELD OF THE INVENTION

The present invention is related to a method to determine revenues in a gaming environment. Furthermore it relates to a data management system, the apparatus to create and record this data on a storage device, the storage device and the method of using the storage device in a gaming environment. This invention relates more specifically to the creation, storage and use of virtual tickets for future distribution to electronic apparatus.

BACKGROUND OF THE INVENTION

There are many kinds of gambling video games in commercial use. Managers choose to operate a particular kind of game with regards to players' preferences, to the current legislation and to meet requirements of certain jurisdictions regarding revenue monitoring. Some of the popular games are slot machines, Poker, Blackjack, Bingo, Lotto and Keno.

The basic principle of slot machines is simple and well known. For decades, players all around the world have played these machines, at first with mechanical reels and more recently video machines equipped with virtual reels. A random number generator (RNG) usually determines the outcomes of both types of machines. The RNG independently determines each element of the outcome, such as each reel of a slot machine, for instance. The outcome is then analysed by the game program to determine whether it is a win or a loss as well as its

corresponding payout. The outcomes in other kinds of games are also determined using the random number generator, whether they are cards, as in Poker or Blackjack, or numbers, as in Bingo, Keno or Lotto. With these machines, short term revenues remain difficult to predict and are rarely consistent.

Managers of casinos and other gaming facilities would prefer to be able to predict a steady revenue in order to avoid periods of high revenue and periods of large loss. Knowing the population of outcomes and the prize distribution schedule would help them achieve this goal. One way is to use a method similar to the pull-tab lottery tickets system. In this system, a predetermined number of tickets are printed and put in a container. After paying a flat fee, the player takes a ticket and reveals the outcome. With a fixed set of outcomes representing a fixed distribution of prizes and tickets sold for the same flat fee, the operator's revenue remains stable and predictable.

This method can be adapted to video lottery terminals which display the outcome on a screen rather than print it on paper. One of the methods used in the industry functions consists of inserting a roll of tickets with bar codes in the video lottery terminals to indicate the outcome of the game. The tickets are cut and distributed to the player who must ask an employee to redeem the ticket for its value. This method requires a high level of monitoring since the operator has to make sure the machine never runs out of tickets. Furthermore, unlike lottery tickets which can be chosen by the players in a stack or on a counter, these tickets are given only sequentially, leaving no sense of control to the player. Finally, some jurisdictions require a display on the game screen informing the player when a population begins or ends. Since a whole population can comprise more than one roll, it is difficult for the machine to display this information.

Crouch et al., in U.S. patent 4,817,951, explain another method to create a population of outcomes in a video game. This population comprises a fixed number of outcomes with a prize distribution schedule. However, with this method, when the population is completely used up, the game generates a new population with a different prize distribution. The monetary value of each population remains the same, so the revenue is predictable. However, since the distribution of prizes varies with time, the revenue is not as stable as with lottery

tickets. Once more, this method does not allow the players to choose a ticket as they are distributed sequentially. Furthermore, some jurisdictions require the prize distribution to be displayed on the gaming screen. Having more than one possible prize distribution makes the display logistics more difficult. The display could also confuse players and cast some doubts on the fairness of the game.

Other games present only one fixed prize distribution schedule. However, like the Crouch system, the population is created within the machine and, by the machine. This machine and the program installed in it must provide their own security systems against fraud and cheating, since there is a physical connection between the apparatus used by the players and the population of outcomes. The same problem appears with the systems in which the outcomes are created, stocked and distributed by the central computer in a network.

Furthermore, the information found in each outcome of the population reflects only the result of the game, i.e. whether the player wins or loses, as well as the corresponding payout. This outcome is sent to the game program which, using the RNG, determines a display corresponding to that outcome. Since the games are created upon pushing the deal button and are not archived individually, little information about each game and the player is available. To track games and player profiles the operators have to buy and install a management system coupled with player tracking devices, such as smart cards.

Furthermore, with these methods, a player can never choose a ticket. The outcomes created in a random order do not grant the player any influence or control over this order. To be able to choose a specific outcome or ticket in a population, and thus give the player the illusion of control, the population has to be determined at the initial phase of its creation, rather than at every play.

Furthermore, the only information about the population available to the operators is its present state, meaning the number of winning outcomes for each level of pay already played and the number of remaining outcomes in the prize distribution schedule. It cannot be predicted when a population is depleted, when a new population is created, how many times the population has been emptied, or if there has been a system reset while a population was in use and what was the played proportion of that population at that time. Not being able to know exactly when a new population is finished and another begins does not respect

certain jurisdiction requirements and the obligation to display this specific information to the player.

Finally, the other methods don't provide a progressive jackpot system that can be used in one or many locations at a time.

SUMMARY OF THE INVENTION

The object of the invention is to provide a population of outcomes in the form of virtual tickets exhibiting the same characteristics as regular outcomes of the same game using a random selection process. For example, for an 8-line slot machine comprising nine (9) symbols, the information on the virtual tickets comprise the nine (9) symbols in the order they would appear on the display and the amount won by the player, being $0.00 for a losing ticket. If a bonus is included in the game, the outcome (the symbols or other elements if present, as well as the amount won) would appear on another line.

According to a first broad aspect of the present invention, there is provided a method for determining revenues of gaming devices using virtual tickets. A population of virtual tickets is generated at a data recording station, each virtual ticket identifying an outcome of a single play of a game. The virtual tickets are distributed to gaming devices, where one virtual ticket is consumed for each play. The play status information is recorded in association with the population as the virtual tickets are consumed. The play status information is then evaluated to determine the revenues of the gaming devices and an output representing these revenues is generated.

Another object of this invention is to provide an apparatus to create this population of virtual tickets.

Furthermore, the invention provides an apparatus to record a population of virtual tickets on a removable and updateable medium.

It is another object of the invention to provide a method to play a game with multiple bet levels using virtual tickets.

Furthermore, the invention comprises a removable, transportable and updateable medium to record a population of virtual tickets. These tickets will be used in another location by a gaming apparatus.

It is another object of the present invention to provide a system in which one or many gaming apparatus are linked to a central control that managesing the virtual ticket populations.

Furthermore, the invention provides a system to collect and archive information about the played tickets and the players who played them, provided a player tracking system is used in conjunction with a player identification device, which is not actually part of this invention.

Furthermore, the invention provides a secure method for managing the creating and recording apparatus.

Another object of the invention is to provide a certifiable and secure apparatus. Both the updateable medium and the creating and recording device can be certified by laboratories or by authorities against fraud or illegal virtual ticket manipulations. Since the creating and recording device and the playing apparatus are in different locations, no physical connection of any kind is possible between them. This precaution prevents unauthorized access to the virtual tickets.

A final object of the invention is to provide a progressive jackpot system that can be used in one or many locations at a time.

With this method, the monetary value of the whole population remains precise, verifiable and certifiable. It also offers players a fair game dependent on a random process, while preventing outside influence on the outcomes.

BRIEF DESCRIPTIONS OF THE DRAWINGS

These and other features, aspects and advantages of the present invention will be better understood with regard to the following description and accompanying drawings, wherein :

Fig. 1 is a representation of a paper lottery ticket;

Fig. 2 is a representation of a virtual ticket for the slot machine embodiment;

Fig. 3 is a representation of a virtual ticket for the video poker embodiment;

Fig. 4 is a prize distribution schedule for a slot machine as used in our preferred embodiment;

Fig. 5 is a prize distribution schedule for a Poker as used in our preferred embodiment;

Fig. 6 is a block diagram explaining the creation of a population of virtual tickets;

Fig. 7 is a representation of the cartridge;

Fig. 8 is a representation of the Ticket Manufacturing Device (TMD);

Fig. 9 is a representation of a network using the PTC system;

Fig. 10 is a representation of a global net using the PTC system;

Fig. 11 is a block diagram explaining the management of the TMD;

Fig. 12 is a representation of an M Report;

Fig. 13 is a representation of a H Report;

Fig. 14 is a representation of a Daily Multi-site Jackpot Report

Fig. 15 is a representation of a Daily Machines Statistics Report

Fig. 16 is a representation of a Daily Cartridges Statistics Report

Fig. 17 is a representation of a Daily Multi-site Jackpot Statistics Report

PREFERRED EMBODIMENTS

Virtual Tickets

In a typical game, outcomes are presented to players, letting them know whether they have won or lost, and in the former case, how much money. In this invention, these outcomes are virtual tickets. These virtual tickets present the same characteristics as paper lottery tickets, i.e. a losing or winning combination and the corresponding payout. Figure **1a** represents one side of a paper lottery ticket **1** according to the prior art. On the ticket the name of the game **2**, the prize distribution schedule **3** and a validation number **4** are shown. Figure **1b** demonstrates the reverse side **5** of the same ticket before it was scratched while figure **1c** shows it after it has been scratched. The players must remove the coating **6** to reveal the combinations **7** composed each of three (3) symbols **8**. By comparing the combinations **7** and the prize distribution schedule **3**, the players know whether they own a winning ticket as well as its redemption value, if applicable. The ticket value is confirmed by the validation number **4** at the moment of its redemption.

Figure **2** shows the printed form of a virtual ticket used for a slot machine. The ticket presents information needed by the players or the operators: the identification of the machine which printed the ticket **9**, the date and time of the play **10**, the name of the game **11**, the combination **12** composed, of nine (9) symbols **13** in a set order corresponding to a display in the case of an 8-line slot machine, the cost for one (1) ticket **14**, the prize won by the player **15**, and a verification number **16**. This number can be printed in the form of characters **16a** or in bar codes **16b**. This validation bar code has proved to be useful as it can be read even if the ticket is damp, torn or crumpled. More information can be added to the ticket when it is played, such as the machine on which it was played, the date and time, the player's identification when used in conjunction with a player tracking system such as smart cards, and whether the player has claimed the prize in jurisdictions where required by law.

Figure **3** shows another form of virtual ticket, this time for Poker with a bonus round. The information found on the virtual ticket for this embodiment remains mostly the same as for the slot tickets, except for the game results. In this particular example, a hand **17** composed of five (5) cards **18** is found. These cards are shown as the value **19** followed by the first letter of the suit name **20**. If the game includes a bonus round in its payout schedule, the outcome of this bonus **21** will appear on the ticket. It could be an amount in dollars or a series of amounts if the bonus comprises several steps, such as the ones in which the players continue to choose items until a symbol indicating the end of the bonus round appears. As seen when comparing figures **1**, **2** and **3**, the virtual ticket is very similar to the paper lottery ticket described above. These virtual tickets can directly control the display without being printed, or they can be printed with or without displaying an animated video game play of the ticket. The player may or may not have to perform a physical act to reveal the ticket outcome, such as opening a printed ticket or pushing a button. Redemption can be done either directly in the video gaming terminal, or via a casino attendant.

Population of Virtual Tickets

A population is composed of a group of tickets, meant to play the same game at the same flat fee value, and created with the same prize distribution

schedule. This schedule or pay-table reflects the intentions of the designer of the games for the total payout and the hit rate of each winning combination. Figure **4** represents a prize distribution schedule used for an 8-line slot machine game. This schedule displays a possible distribution of the different prizes to obtain the desired total payout **22** with a previously set population size **23**. The different winning combinations of symbols **24** are also called tiers **25**. The table also shows the total number of each tier **26** that can be found in the population and its redemption value (called odds) **28**. Combinations of tiers **29** can be found in the table since more than one tier can be displayed on a ticket at once. The numbers of these combinations **30** are then subtracted from the total number of tiers **27** to obtain the real number of single tiers **31**.

Figure **5** shows a possible prize distribution schedule used for the Poker embodiment. Since we cannot get two or more winning outcomes **32** at a time, we only have the total quantity (*total qty*) **33**. In this particular example, a bonus **34** was awarded. An outcome **35** was determined as the trigger event for the bonus round. In the case of a slot machine, the trigger event could be a tier, a combination of tiers or a single symbol in a predetermined position, such as the center, for example. In a Poker game, the trigger event **35** is usually a particular card combination such as a hand which includes three (3) sevens as shown in this example. It is important to know exactly how many times the trigger event **36** and each bonus prize **38** appear in the population, as well as their value **37**, to evaluate the bonus payout. A progressive jackpot **39** can also be added to the highest bonus prize.

Figure **6** illustrates how a population is created. Two copies of the prize distribution schedule **40** are made: the first copy serves as an image of the total population to record the information about this population on the cartridge while the other copy is used to create the population **41**. A random number between zero (0) and the population size value is generated by the random number generator (RNG) **42**. Knowing the prize distribution schedule **41**, the program finds the event corresponding to that number **43**. The ticket is generated by the program **44** and recorded in a RAM **45**. The chosen outcome is removed from the available outcomes and the population size is decreased by one **46**. The size of the population of outcomes is evaluated **47**. If there remains any outcomes in

the population the RNG selects another number **42**. Otherwise, the population of virtual tickets is completed and recorded on a medium **48** for later use on a gaming apparatus.

Different types of tickets can be found in a population: losing tickets, winning tickets, winning tickets with bonuses and gateways. There are different types of bonuses available: a money bonus for which the amount (or amounts, for a multiple step bonus) is clearly indicated on the ticket, free play bonuses could also be found and would clearly state the number of free plays the player would win. Other kinds of bonuses exist as well. Finally, the last type of ticket is the gateway. Gateways are winning or losing tickets which further give access to another population of tickets usually shared by many casinos. This second-level population will be explained later.

Usually, a game uses only one population of virtual tickets which all bear the same value. However, players prefer to be able to bet on as many lines or poker hands as they want, as is usually the case with random machines. To render this possible, the game uses many populations. In fact, it uses one (or many) population(s) for each bet level (number of lines or poker hands played). That way, if the player bets on three (3) lines, the game will get the outcome, symbols and payout in the population of tickets corresponding to a bet on three (3) lines. The chosen ticket will grant a payout that reflects the three (3) lines played.

Cartridge

The invention requires a portable and partly updateable, partly non-updateable medium. These 2 functions can be divided into 2 mediums. The non-updateable medium could be a CD that would contain the population of tickets, while a hard disk or any other updateable medium would receive the information about the tickets once they are played. Another embodiment would be to gather a huge population of tickets on a CD and use a smart card as the updateable medium. This time, the population contained on the CD would be used with more than one smart card. Each smart card would contain a certain number of entries (much less than on the CD) consisting of ticket numbers or tags. To play, players would insert their card and the game would find on the CD

the tickets corresponding to the tag found on the card. The population would be determined and the payout and revenue would be predictable. The information about the played tickets would also be recorded on the smart card. However, the preferred embodiment, as shown on Figure **7a** and **7b**, is a cartridge **100** composed of a micro-controller equipped with EEPROM memory, a physical support for the memory, more precisely 4 MB of re-programmable flash memory divided in ten (10) blocks, each containing up to 22,500 tickets for a total population of up to 225,000 virtual tickets, a communication port **101**, diodes **103** and a low-level program that controls the writing in the flash memory and the communication port **101** as well as the diodes **103**. For security reasons, it is preferred to use an ATMEL™ AT89S8252 micro-controller with internal EEPROM memory since its low-level program cannot be read or modified without accessing directly the micro-controller. Flash memory has been chosen for the same reason. Data in flash memory cannot be over-written over,; it must be erased beforehand. Furthermore, flash memory can be erased by block only, and not by item, like an outcome or a ticket. The low-level program also prevents the early burning of the EEPROM memory by instructing the event pointers to increment their addresses during the multiple recordings of the cartridge.

The cartridge **100** is also composed of a protective case **102** in which the flash memory, the micro-controller and all the circuits needed are concealed. The communication port **101** is located at one end and the diodes **103** at the other. Since the information is recorded in a flash memory, the cartridge **100** does not need any independent energy source, such as a battery, to extend its active life.

The communication between the cartridge **100** and the recording apparatus (described below), a network, or the gaming apparatus, is exclusive and secure. This security is ensured by the micro-controller, as explained later.

Diodes **103** are used to communicate the state of the cartridge **100** when it is connected to a network or gaming apparatus. Different diodes **103** transmit different information to the operator. For example, one of the diodes **103** indicates to the operator whether there is power on the cartridge **100** or not. A cartridge **100** must never be removed when this particular diode is turned on.

Furthermore, two (2) or more diodes **103** can be used together to give more information on the status of the cartridge **100**.

Ticket Manufacturing Device

Figure **8** shows the Ticket Manufacturing Device (TMD) **104** or Cartridge Programmer apparatus used to create and record a population of tickets on a cartridge. It is composed of a Power PC ™, a micro-controller using EEPROM internal memory that directs and secures communications with the cartridge, a protective case **105**, a touch screen **106**, a port to connect an Ethernet cable **109**, a serial port to attach a printer cable **110**, a keyhole for a security key **107**, and a communication port **108** to plug in the cartridge **100**. A non-volatile memory in the device logs all of the events regarding the TMD **104**, such as the number of recorded cartridges. The log can be downloaded and archived on a PC via the Ethernet cable. Each TMD micro-controller is unique and has a single signature corresponding to its serial number. In the event where two micro-controllers are substituted one for the other, the information contained on the micro-controller and the RAM backup would be different, freezing both TMDs and rendering them unable to write or read a cartridge. In the same way, a cartridge recorded with a specific TMD could not be read by another TMD.

The communication between the TMD **104** and the cartridge **100** is controlled by the micro-controllers in both devices, rendering it exclusive and secure. The information about the population is encrypted by the micro-controller of the TMD, sent to the micro-controller of the cartridge, and recorded onto it. The tickets' information is divided into packets and encrypted using a specific encryption key. This encryption can only be recognized and understood by the device used to play the game and the specific TMD **104**, or family of TMDs when more than one is needed in a gaming facility. Each different family of TMD is encrypted with a different key. That way, a cartridge **100** can only recognize a TMD **104** using the same encryption key, rendering it useless for another casino or someone trying to fraud the system. When the cartridge micro-controller receives the information, it is decrypted and recorded with another encryption logarithm specific to the cartridge micro-controllers, ensuring total security to the

system. The security is also enforced by the use of a security key that must be inserted in the keyhole **107** to activate the TMD.

When a cartridge **100** is connected to the TMD **104** via its respective communication ports **101** and **108**, the state of the cartridge **100** is determined. If the cartridge **100** is blank or in error mode, it can be fed with virtual tickets and a population can be recorded. On the other hand, if the cartridge **100** already contains a population, whether the tickets were played or not, the TMD **104** prompts the operator to download this population on a computer via the Ethernet cable **109**. The information is then archived for further use as a player's profile tool, for the management of the cartridges, or for legal requirements. Finally, the cartridge information is erased and a new population is created and recorded.

To create a new population, the operator answers the questions that appear on the TMD screen **106**. They must select the desired game, the population size (up to 225,000 tickets with a flash memory of 4 MB), the payout of the game and the ticket fee. The apparatus selects a prize distribution schedule and the creation of the population carries on as explained above. The population is given a serial number consisting of the TMD number and the number of recorded cartridges. For example, a cartridge bearing the serial number 254056 would be the fifty-sixth (56^{th}) cartridge recorded on the TMD number 2540. This serial number also helps the management of the TMD as explained further. Once the population is created, it is recorded on the cartridge. It is very important not to remove the cartridge from the TMD until the completion of the downloading and the recording; the cartridge would be set in error mode and could not be used unless a new population was recorded.

When a cartridge has been used up, or when the operator decides so, the information contained on the cartridge must be downloaded and archived so it can be erased to record a new population, both operations using the TMD. A report can then be printed out and sent to the gaming authorities who request such documents. The content and use of the reports (before and after the use of the cartridge) will be explained further.

Network

Once the population is recorded on the cartridge, the said cartridge can be placed in a network or in a gaming apparatus. If the cartridge is placed in a gaming apparatus, the game program will use the cartridge as a source of outcomes. From the player's point of view, the game looks exactly like a random game, but the RNG is never used. In this game, the outcomes are displayed on the screen, using the symbols instead of their names or numbers. The machine will need at least two (2) cartridges to ensure that a new population is ready to come into function once the previous one is used up. This precaution would avoid down time.

However, the preferred embodiment, or PTC system, is to uses the cartridges in a network as shown on Figure **9**. This Local Area Network (LAN) comprises a central computer **112**, gaming apparatus **113**, and a cashier terminal (CT) **114**. The central computer **112** comprises a LAN controller **115** and cartridge adapters **116** on which the cartridges **100** are plugged in, giving them an address. This adapter **116** can receive up to sixteen (16) cartridges **100** at a time, feeding up to sixty-four (64) gaming apparatus **113** and CT's **114**. There should be a LAN for each different game fee found in the casino since the machines are usually organized first by denominations and then by games.

The communication between the LAN controller **115** and the cartridge **100** is exclusive and secure, as is the one existing between the cartridge **100** and the TMD **104**. Nobody can access, read, or modify the content of the cartridge **100** via the LAN even if the information is not encrypted on the cartridge **100**. To access and read this information, someone would have to communicate with the micro-controller using the encryption key used by the micro-controller. Consequently, the only way to read a ticket would be using a gaming apparatus, therefore playing it. The only possible modification would be to mark a ticket as played, but without having any knowledge about the ticket, that would be absolutely useless and rendered impossible by the encryption. The encrypted information about each ticket is sent from the cartridge **100** via the cartridge adapter **116** to the LAN controller **115**. The controller **115** decrypts and analyzes the information so it can be sent to the right machine. The controller **115** re-

encrypts the information and sends it to the machine **113** and CT **114**. The game program decrypts for the last time the ticket content and displays it.

When a cartridge **100** is connected to the adapter **116**, the information about that cartridge **100** and the game population it contains is sent to the controller **115**. This information is then logged on and the population is linked to the electronic address given by the adapter **116** so the controller can use this cartridge when needed. For each different game, a cartridge is used as long as it is active. Three (3) events can occur to render a cartridge **100** inactive: all of the tickets have been used, the cartridge **100** has been removed from the adapter **116**, or it is set in error mode (technical problem). When the cartridge **100** is inactive, the controller **115** chooses the next available cartridge of the same game.

The virtual tickets can be played on a gaming machine **112** like a video poker or a slot machine, also known as an amusement with prizes (AWP) machine. From the player's point of view, these machines would not be any different from the random machines, the displays being similar except for some details required by certain jurisdictions. On this kind of machine, the virtual ticket can also be displayed as would it would be in its paper form. Another way to play the tickets would be to print them as lottery tickets on a printer or cashier terminal (CT) **114**. A third manner to play the tickets would be online, by connecting the network to a gaming website. One or more of these apparatus or method can be used at the same time on the same network. Regardless of the type of machine used, in certain jurisdictions, the player must act directly on the ticket or the machine to reveal the outcome. This can be done by pushing a button, virtually scratching a displayed ticket on a touch screen, or by scratching, separating the different sheets or opening a window on a paper ticket. Similarly, these jurisdictions require that the players also act to redeem the ticket at a redemption or cashier window or directly on the gaming apparatus.

The Cashier Terminal (CT) **114** not only prints the tickets, it also allows the operator to control and manage the LAN. The CT **114** monitors everything that happens in any gaming apparatus and adds it to the system statistics. It also controls the local progressive jackpot, i.e. the jackpot included in the first-level populations. Finally, it keeps track of the contribution to the multi-site progressive

jackpot coming from this LAN. To get an instant picture of the system, a computer (laptop or PDA) can be connected to the CT **114** and information can be downloaded to be analyzed subsequently. This computer generates and prints daily or master reports about the LAN, the linked machines and the cartridges played on this network as explained further. It is important to note that no information about the status of a particular cartridge is available on the CT **114**.

The whole system is controlled by a Wide Area Network (WAN). Figure **10** illustrates such a WAN **119**. This network is the home of the multi-site progressive jackpot explained below. This network **119** is composed of the WAN controller **120**, the monitoring terminal (MT) **121** responsible for the net and information management, and the PTC adapter **115** and cartridges **100** on which the progressive jackpot populations are recorded. Each LAN controller **115** is linked to the WAN controller **117**. The MT **121** controls and keeps track of all the contributions to the multi-site progressive jackpot, whether they come from the local or multi-site games.

Playing a ticket

In a random machine, as soon as the player pushes the *Play* button, the RNG determines the symbols or cards that will be displayed and then analyzed as losing or winning combinations. In the preferred embodiments, the outcome comes from the cartridge and follows a predetermined routine. Here is an explanation of what happens when a player wants to play a slot machine ticket on a multi-line game giving the choice of betting on one or more lines and choosing a block or a particular ticket.

First, the player inserts money (coins or bills) or a smart card into the machine. If the casino uses a player tracking system, the system immediately recognizes the player. Second, the player selects a number of lines to play; he chooses a ticket block or singles out a ticket. In this example, a single ticket was chosen.

As soon as the *Play* button is pressed, the machine sends all the information about this ticket, the player, and the machine itself to the controller. The latter makes sure the machine is active and sends the information to the

cartridge already logged as the cartridge in play for that game. The cartridge verifies if the requested ticket is available, otherwise, the player is advised to choose another ticket or block. If the ticket is available, it is marked as played (flag) and claimed. The information about the machine, the player (if a player tracking device was used), and the date and time of play is added to the ticket information on the cartridge. If the ticket is played on a cashier terminal (CT) the ticket will not be marked as claimed. The symbols and payout information is sent to the machine. The symbols and prize are displayed to the player. In certain jurisdictions, the player is asked whether he wants to claim his prize or not. If the prize is not claimed by the player, or if the ticket was played on a printer, the ticket is marked as unclaimed. Finally, the player receives his prize.

Gateways

Some tickets of a population can be gateways or tickets which give access to a second-level population. This second-level population is located on a cartridge adapter in the WAN and shared by several casinos. A progressive jackpot is awarded in that game. The contribution for the progressive jackpot comes from both levels of play. A percentage of the bets of each and every bet placed in the machine of the system feeds the progressive jackpot. Also, all of the unclaimed prizes are added to the progressive jackpot. This method has the advantage of offering the player the chance of winning a substantial jackpot with the ease of managing smaller populations for the casinos. In fact, this jackpot can be as big as a multi-site jackpot offered with random machines.

The second-level population has the same characteristics as the first-level population, including its own prize distribution schedule. It is created and recorded on a cartridge by the TMD. The main difference is that this population is shared not only by several machines but also by several casinos. The players cannot select this game when they play on a multi-game machine; they must get the particular ticket, named gateway, which can take them there.

After placing a bet, the players get a ticket from a first-level population, or regular game. They can obtain a losing, winning or gateway ticket. In the case of a gateway ticket, the display changes according to the second-level game associated with the second-level population. This display can be identical or very

different from the regular game. The player places a bet and a ticket is drawn from the second-level population and displayed on the screen (or printed). When the ticket is a winning one, the player is awarded a prize. The player is then taken back to the regular game and will remain there until the next gateway ticket. Usually, some of the prizes won in that game are more interesting than the ones in the regular game, but the real advantage is its progressive jackpot.

MANAGEMENT

The PTC system is managed and operated by both the casinos and the distributors. The manufacturer sells all of the components to the distributor in exchange for royalties and a percentage of the sales. Then, the distributor rents the system to the casinos and other gaming facilities. Usually, the Wide Area Network (WAN) and the multi-site progressive jackpot are operated by the distributor. Dividends based on the revenue generated by the system are added to the base rent. To evaluate this revenue, various means are used, such as the TMD used and the reports created by the system. These are explained in more details below.

TMD management

The TMD can be operated by various people or organizations. It can be operated by the manufacturer, the distributor, the casino managers or gaming facilities, and, finally, by a gaming board or any other agency or laboratory. The preferred mode of operation for this invention is to allow managers of the casino or other gaming facilities to operate the TMD, while applying certain restrictions.

The manufacturer builds and programs both the cartridge and the TMD. The cartridge program only includes the low-level program. The TMD program includes all of the different prize distribution schedules for all of the different games. The cartridges and the TMDs are then sold to the distributor who will subsequently sell them to the casinos and other gaming facilities, such as bingo halls.

Figure **11** demonstrates the way the TMDs are operated by the casinos and the distributors. After recording twenty-five (25) cartridges **150**, the operator must generate a report **121** about these recordings and send it to the distributor

153. Once this is done, the operator can record up to twenty-five (25) more cartridges on the TMD **152**, making a total of fifty (50) cartridges. When the distributor receives the report, he sends the manufacturer the identification key code it contains **154**. By entering this key code in a program **155** used exclusively by the manufacturer, an unlocking key code is generated **156**. This key code is communicated to the casino manager operating the TMD via the distributor **157**. After disclosing the key code in the TMD **158**, the casino can record twenty-five (25) more cartridges **159**, up to the seventy-fifth (75^{th}) cartridge. When the fiftieth (50^{th}) cartridge is recorded, a report is generated **160** and all of the steps of the twenty-fifth (25^{th}) cartridge are completed again. At any moment, if a report is not generated or a code is not inserted in time, the TMD freezes and no cartridge can be recorded until it is done. A TMD can be used to record up to one thousand (1,000) cartridges. Once this number is reached, the casino must send the TMD back to the distributor and purchase a new one.

This method has the advantage of giving a certain control to the distributor as to the quantity of cartridges in distribution. It also records the revenue earned by the casinos using the system, setting forth a direct and easy way to calculate the dividends owed by the casinos. Another advantage is that it allows one to keep track of the different games so the distributor and the manufacturer can make better decisions about present and future games.

The Reports

Many reports are generated to manage and control the use of the apparatus and the revenue generated by the PTC system. Some of them are generated by the TMD while others are generated by software, the PTC Console, using the TMP reports.

When the population is created and recorded on the cartridge, the TMD creates a report such as the one shown on figure **12**. This report (M Report) informs the operator about the cartridge and its contents. Specifically, the serial number of the cartridge **200**, its state at the moment of the insertion in the TMD **201**, the, population size **202**, the number of entries played **203** (at this stage zero (0)), the selected game number **204** (a list of these game numbers appear on the TMD screen when the population is created), the game's payout **205**, the

ticket cost in cents **206**, the bet multiplier **207**, the life expectancy of the cartridge **208** (evaluated in number of consecutive recording processes where one hundred (100) indicates a new cartridge and zero (0) a dead cartridge), the version of the program controlling the cartridge **209**, the type of PTC **210** (meaning i.e. the type of game such as poker, slot, slot multi population, etc), the percentage of gateway tickets **211**, (zero (0) indicating a cartridge without any gateway tickets), and the name of the casino using the PTC **212**. On the second line, we find all of the odds in dollars **213** listed according to a predetermined distribution and in four (4) groups. The first (1st) group contains the normal odds, the second (2nd) group contains the combo odds (i.e. odds for results comprising more than one winning combination like two (2) or more winning lines in a multi-line slot machine), the jackpots appear in the third (3rd) group of odds and finally, the gateways (generally (0)) constitute the fourth (4th) group. The third (3rd) line **214** gives the date and time of the cartridge creation. The following line **215** gives information on the last life of the cartridge. It gives all of the information given on the first line of the report but for the now erased population. The fifth (5th) line gives the monetary information about the last life of the cartridge. This information is the total amount played (IN) in cents **216**, the total paid amount in cents (claimed or not) (OUT) **217**, the number of claimed games **218**, and the total claimed amount in cents **219**. The other lines **220** of the report indicate the number of each outcome (tiers or type of hands). These outcomes correspond to the odds listed on the second line.

Another report (H Report) is created when the population has completely been used and the information is downloaded before another population is created. This report is illustrated in Figure **13**. The first line of his report indicates the general information about the cartridge and the population: the serial number **221**, the status of the cartridge **222** (generally zero (0) for *Ok*), the population size **223**, the number of tickets played **224**, the type of game **225**, the payout in percentage **226**, the ticket cost in cents **227**, the bet multiplier **228**, the cartridge life expectancy **229**, the version of the software used to record the population on the cartridge **230**, the type of PTC (slot, poker, etc) **231**, and the name of the casino where the cartridge was used **232**. The second line **233** on the H Report is similar to the second line on the M Report: it lists all of the

different odds. The other lines each correspond to a ticket. Each line indicates whether the ticket has been claimed or not **234**, the combination of symbols or cards displayed on the ticket **235**, the corresponding tier or type of hand in the prize distribution schedule **236**, the amount paid in cents **237** (zero (0) if it was a losing ticket or if the ticket has not been played), the number of the machine on which the ticket was played (zero (0) if not played) **238**, (this number also indicates the type of gaming apparatus since a range number is exclusive for a type of apparatus), the player number **239**, and the date and time of play **240**. The player number can be generated by the system without any player tracking possibilities or it can be an identification number when a player tracking system is used. If the player number is generated by the system, the number is incremented by one when there is no more credit on the machine.

When a ticket is played on a cashier terminal (CT), it is automatically marked as unclaimed because the cartridge might not be in the system anymore once the ticket is cashed in at a redemption counter. Since the validation number of the ticket refers to the cartridge it comes from, it is possible to link it to the H Report later on in the PTC Console so the information about the population is complete. Consequently, it is possible to obtain a clear picture of the revenue generated by the cartridge. A final report can be printed and sent to gaming authorities and to the distributor to evaluate the dividends owed by the casino.

The PTC Console can not only produce the M Report and the H Report, but it can also catalogue all of the populations created or used in a week, a month or any other length of time. It generates all the reports about the cartridges themselves, their creation, use and revenue. This gives the casinos a powerful tool to predict and determine the revenues generated by the PTC system.

The Cashier Terminal (CT) keeps track of what happens on the Local Area Network (LAN). It monitors and controls the local progressive jackpot, i.e. the jackpot included in the first-level populations or qualifying game, and keep tracks of the contributions to the multi-site or primary jackpot. Its last function is to generate reports about the activity on the LAN, daily or for longer periods of time. One of the reports generated by the CT, as seen on figure **14** as a daily report, transmits information about this primary jackpot. This report informs the casino on

the amount owed to or by the distributor who manages the multi-site jackpot **310**. This amount is calculated by adding all of the amounts going to the multi-site progressive jackpot and the license fee **302** to access this e multi-site jackpot, and subtracting the primary jackpots won **308** or redeemed **309** in the casino. The added amounts are: the cost of tickets **302** (consisting of a percentage **301** of the primary tickets played **300**), the qualifying game contribution to the primary jackpot **305** (usually one percent (1%) of all the played tickets in the qualifying game), and the primary game contribution to the primary jackpot **307** (one (1%) **306** in this example). The license fee **304** is also a percentage **303** of the primary game tickets played in this casino.

The Daily Machine Statistics Report shown on figure **15** communicates the information about the machines. A report is generated for each machine **311** and informs the operators about the tickets played on the machine **312**, wins **313**, and losses **314**. It also lists the amounts played **315**, won **316**, and unclaimed **317** by the players on this particular machine. This information is useful to evaluate the profitability of a machine and compare the different games or multi-games found in a casino.

Figure **16** shows the last report, the Daily Cartridges Statistics Report. It informs about the number of cartridges played on the LAN **318**, the number of players **319**, and the average number of tickets played by each player **320**. It also lists the number of tickets played **323**, wins **321**, and losses **322**, and the corresponding money value: total amount played **325**, won **326** and the payback percentage **327**. The percentage of winning tickets **324** is also calculated. This information is useful to determine the revenues generated by the PTC system for the day or other period of time.

The Monitoring Terminal (MT) will generate some of the same reports but these ones will be about the Wide Area Network (WAN) and the primary game jackpot and cartridges. Since no machines are linked directly to the WAN, no report on the machines can be generated. The Primary Game Cartridges Statistics will be identical to the ones shown on figure **16** but will give information about the cartridges playing the primary game. Since the MT monitors all the contributions to the primary progressive jackpot, the Multi-site Jackpot Statistics

Report, figure **17**, lists the statistics for each casino **328** and calculates the total for all the casinos linked to the multi-site jackpot **329**.

The description of the preferred embodiments of the present invention above has been presented for illustration purposes and do not intend to limit the invention. It will be understood that it is capable of further modifications and the application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice within the art to which the invention pertains and as may be applied to the essential features before set, and follows in the scope of the appended claims.

CLAIMS

1. A method of determining revenues of gaming devices using virtual tickets, said method comprising steps of:

generating a population of said virtual tickets at a data recording station, said virtual tickets each identifying an outcome of a single play of a game, said outcome including a monetary value;

distributing said virtual tickets to at least one of said gaming devices, wherein said gaming devices consume one of said virtual tickets for each play;

recording play status information in association with said population as said virtual tickets are consumed; and

evaluating said play status information to determine revenues of said gaming devices and generate an output representing said revenues.

2. The method as defined in claim 1, wherein said virtual tickets further comprises information about the population from which said virtual tickets originate, said information allowing the prediction of the revenues generated by the population, and said information comprising at least one of the following items:

a fee value of one said virtual ticket;

size of said population; and

payout of said population.

3. The method as defined in claim 2, wherein a fee value of one said virtual ticket is determined at the moment of its creation.

4. The method as defined in claim 3, wherein said virtual tickets of said population all identify outcomes for the same game at the same fee value, said fee value being flat for all said virtual tickets, and said virtual tickets being created with the same prize distribution schedule.

5. The method as defined in claim 2, wherein said virtual tickets further comprise a unique identification number, the step of distributing said virtual

tickets further comprising a step of redeeming a monetary value of said virtual tickets at a later moment and at another location; and the step of evaluating said play status information further comprising the steps of:

linking said virtual tickets redeemed at another time and location with the population from which they originate using said unique identification number;

updating the play status information of said population; and

evaluating total revenues generated by said population.

6. The method as defined in any one of claims 1 to 5, wherein said game is one of the following types of game:

poker;

blackjack;

one or multi-line slot machine game;

lotto;

keno; and

bingo.

7. The method as defined in any one of claims 1 to 6, wherein said virtual tickets further comprise all components necessary for display of one said play of said game.

8. The method as defined in any one of claims 1 to 5, wherein said virtual tickets further comprise a bonus outcome comprising a monetary value.

9. The method as defined in claim 3, wherein said step of generating comprises:

including gateway information in said virtual tickets, said population being a first-level population; and

generating a second-level population of virtual tickets, said gateway information allowing access to said second-level population;

and wherein the step of distributing said virtual tickets further comprises when at least one of said distributed virtual tickets from said first-level population comprises said gateway information, then:

giving access to said second-level population and distributing at least one of said virtual ticket from said second-level population;

awarding a prize when said second-level population virtual ticket is a winning one; and

said gaming devices continuing to consume said virtual tickets from said first-level population.

10. The method as defined in claim 9, wherein a plurality of said first-level populations share a common second-level population.

11. The method as defined in claim 9, wherein the fee value of the virtual tickets of said second-level population is zero (0).

12. The method as defined in claim 9, wherein said second-level population comprises at least one jackpot prize.

13. The method as defined in claim 12, wherein said jackpot prize further comprises a progressive contribution coming from a predetermined percentage of the fee value of all of the tickets from said first-level populations.

14. The method as defined in any one of claims 12 to 13, wherein the step of distributing said virtual tickets further comprises the steps of:

informing a player of a prize won in case of a winning ticket;

waiting for said player to act upon claiming the redemption of said prize;

awarding said prize if claimed within a predetermined period of time; and

adding an amount of said prize value to the second-level population jackpot when said player has not claimed said prize within said predetermined period of time.

15. The method as defined in claim 14, wherein said second-level population contains virtual tickets identifying outcomes for the same game than said first-level population.

16. The method as defined in any one of claims 1 to 15, wherein the step of generating a population further comprises recording said population in a sequence that cannot be modified during the distribution of said virtual tickets, the step of distributing said virtual tickets comprises distributing said virtual tickets according to said sequence and incrementing a pointer each time one of said virtual ticket is distributed to mark a position in said sequence, the step of recording play status information comprising recording said pointer position in said population, and the step of evaluating play status information comprising using said pointer position to determine said revenues.

17. The method as defined in any one of claims 1 to 15, wherein the step of recording play status information further comprises the step of recording specific information about the distribution of said virtual tickets, said specific information being at least one of the following:

flag-type information informing whether said virtual ticket was distributed or not;

identification of said gaming device to which said virtual ticket was distributed;

identification of the player who played said virtual ticket;

date on which said virtual ticket was distributed;

time on which said virtual ticket was distributed; and

information on whether said virtual ticket was redeemed immediately or not.

18. The method as defined in any one of claims 1 to 17, wherein said population is divided in at least two groups of said virtual tickets.

19. The method as defined in claim 18, wherein the step of distributing said virtual tickets further comprises the step of allowing a player to choose one of said groups.

20. The method as defined in any one of claims 1 to 18, wherein the step of generating a population comprises arranging the virtual tickets in a random order

in said population, the step of distributing said virtual tickets comprises the step of allowing a player to choose a specific one of the virtual tickets.

21. The method as defined in claim 3, wherein said population further includes at least one of the following types of virtual tickets:

virtual tickets each identifying an outcome of a single play of said game, said outcome including a monetary value, further comprising a bonus outcome, said bonus outcome comprising a monetary value;

virtual tickets each identifying an outcome of a single play of said game, said outcome including a monetary value, further comprising gateway information, said gateway allowing access to a second-level population.

22. The method as defined in any one of claims 1 to 21, wherein step of distributing said virtual tickets further comprises the use of more than one said population to play said game, and further comprising the steps of:

associating at least one population with a different fee value;

selecting one of said more than one population corresponding to the fee value chosen; and

drawing a ticket from said selected population.

23. The method as defined in any one of claims 1 to 22, wherein said population comprises at least five thousand (5000) virtual tickets.

24. The method as defined in any one of claims 1 to 23, wherein the step of generating said population further comprises storing said population on at least one non-volatile memory medium.

25. The method as defined in claim 24, wherein said non-volatile memory media are divided into a non-updateable and an updateable component.

26. The method as defined in claim 25, wherein said non-updateable component contains said virtual tickets and general information about said

population and the updateable component contains all of the gathered information about the virtual tickets distribution.

27. The method as defined in claim 26, wherein said general information is recorded once on the non-updateable component and shared by all of the virtual tickets.

28. The method as defined in claim 24, wherein the information is recorded in flash memory on said media.

29. The method as defined in claim 26, wherein both said components are contained in a unique medium.

30. The method as defined in claim 29, wherein said unique medium is an electronic cartridge.

31. The method as defined in claim 26, wherein each said component is contained in a different medium.

32. The method as defined in claim 31, wherein said non-updateable component consists of a CDROM.

33. The method as defined in claim 31, wherein said updateable component consists of a smart card.

34. The method as defined in claims 24 to 33, wherein data representing said population is secured by encryption.

35. The method as defined in claims 24 to 34, wherein the step of generating the population with the data recording station comprises the steps of:

establishing a direct communication between said non-volatile memory mediums and said data recording station;

selecting a prize distribution schedule;

creating said population of said virtual tickets; and

recording said population on said non-volatile memory media.

36. The method as defined in claim 35, further comprising, immediately after establishing said communication, the steps of:

establishing the status of said non-volatile memory media;

downloading information gathered on said non-volatile memory media when present;

generating a report about said information downloaded from said non-volatile media; and

resetting of said non-volatile memory media.

37. The method as defined in claim 35, wherein the step of selecting a prize distribution schedule further comprises at least one of the steps of:

selecting a fee value;

selecting a game type;

selecting a game;

selecting a population size;

selecting a payout percentage;

selecting a gateway ticket percentage; and

selecting a bonus ticket percentage.

38. The method as defined in claim 35, wherein step of generating said population comprises the steps of:

copying said prize distribution schedule in RAM;

picking a number using a random number generator, said number ranging from 1 to the outcome population size;

determining the outcome corresponding to said picked number;

removing said outcome from prize distribution schedule;

creating the virtual ticket;

adding said virtual ticket to said virtual ticket population;

decreasing said outcome population size by one;

evaluating said outcome population size; and

repeating the creating steps, from picking a number to evaluating the outcome population size, as long as said outcome population size is different than zero (0).

39. The method as defined in claim 35, wherein step of recording said population further comprises the step of recording the virtual tickets in a random order.

40. The method as defined in claim 35, further comprising after the recording of said population the step of generating a report about said recorded population.

41. The method as defined in claim 35, wherein the step of recording said population further comprises the step of terminating the communication between said non-volatile memory media and said data recording station.

42. The method as defined in claim 1, wherein the distribution of said virtual tickets comprises the steps of:

receiving fee value, said fee value corresponding to the cost of one ticket;

sending information about said game and said fee value to a ticket distribution controller, said ticket distribution controller analyzing said information and determining from which population said virtual ticket should originate;

selecting a population corresponding to the selected game;

selecting a virtual ticket from said population;

gathering said play status information of said virtual ticket;

sending said virtual ticket to said gaming device;

displaying outcome; and

awarding a prize according to said monetary value.

43. The method as defined in claim 42, wherein the distribution of said virtual tickets further comprises the step of selecting a game.

44. The method as defined in claim 42, wherein said play status information comprises a pointer which increments according to the distribution of said virtual tickets.

45. The method as defined in claim 42, wherein said play status information comprises specific information about the distribution of said virtual ticket.

46. The method as defined in claim 45, wherein said specific information comprises at least one of the following:

flag-type information informing whether said virtual ticket was distributed or not;

identification of the machine to which said virtual ticket was distributed;

identification of the player who played said virtual ticket;

date on which said virtual ticket was distributed;

time on which said virtual ticket was distributed; and

information on whether said virtual ticket was redeemed immediately or not.

47. The method as defined in any one of claims 42 to 46, wherein all the steps of distributing said virtual tickets are all executed by a unique apparatus, said apparatus being said gaming device.

48. The method as defined in any one of claims 42 to 46, wherein step of distributing said virtual tickets to said gaming devices is executed via a network.

49. The method as defined in claim 48, wherein said ticket distribution controller is included in the controller of said network.

50. The method as defined in any one of claims 24 to 33, wherein the distribution of said virtual tickets is done via a network.

51. The method as defined in claims 48 or 50, wherein the step of distributing said virtual tickets further comprises the steps of:

encrypting said virtual tickets;
transmitting said virtual tickets to said gaming devices; and
decrypting said virtual tickets in said gaming devices.

52. The method as defined in any one of claims 1 to 50, further comprising the management of all of the devices used to generate and distribute said virtual tickets as well as record and evaluate said play status information; said management including at least one of the following elements:
renting of said devices;
license fees;
dividends;
purchasing of devices and populations;
distribution of shared profits;
maintenance; and
certification by gaming authorities or gaming laboratories.

53. The method as defined in claim 52, wherein the renting of said data recording station further comprises the following steps:
printing a report about all of the recorded population when a predetermined number of said recorded populations has been reached, said printing allowing to further record a predetermined number of said populations;
getting an unlocking key code or unlocking device in response to said report; and
using said unlocking key code or said unlocking device on said data recording station, allowing a further recording of a predetermined number of populations.

54. The method as defined in claim 12, wherein the step of evaluating said play status information further comprises the generation of at least one report informing about the play of said second-level population and level of said progressive jackpot.

55. The method as defined in claim 54, wherein said report further informs about said second-level population and said jackpot for each of the first-level population giving access to said second-level population.

56. The method as defined in claim 55, wherein said report further comprises information about dividends and license fees.

57. The method as defined in any one of claims 1 to 56, wherein the step of evaluating said play status information further comprises the generation of at least one report informing of the distribution of said virtual tickets all coming from one said population; said report stating for each said population at least one of the following information:

type of said game;

name of said game;

size of said population;

fee value of one said virtual ticket;

payout of said population;

number of said virtual tickets distributed;

total fee value of all said distributed virtual tickets;

total monetary value of all said distributed virtual tickets;

total monetary value immediately redeemed of said distributed virtual tickets; and

revenues generated by the population, said revenues being obtained by subtracting the monetary value of said distributed virtual tickets immediately redeemed to the total fee value of said distributed virtual tickets.

58. The method as defined in claim 57, wherein said play status report further comprises for each said virtual tickets of said population at least one of the following information:

identification number;

flag type information informing whether said virtual ticket was distributed or not;

outcome, said outcome being as simple as an indication of a winning or losing ticket or as complete as all the information required to its display;

monetary value;

identification of the gaming device to which it was distributed;

identification of the player to whom it was distributed;

date of its distribution;

time of its distribution;

information whether is was redeemed or not.

59. The method as defined in any one of claims 1 to 58, wherein the step of evaluating said play status information further comprises the generation of at least one report informing of the distribution of said virtual tickets to said gaming devices; said report stating for each said gaming device or for each group of said gaming devices at least one of the following information:

number of said virtual tickets distributed;

number of said distributed virtual tickets identifying a winning outcome comprising a monetary value higher than zero (0);

number of said distributed virtual tickets identifying a losing outcome comprising a monetary value equal to zero (0);

number of different players using the gaming devices;

total fee value of all said virtual tickets distributed;

total monetary value of all said distributed virtual tickets identifying a winning outcome; and

percentage of said total fee value represented by said monetary value.

FIG. 1A

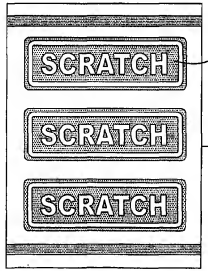

FIG. 1B

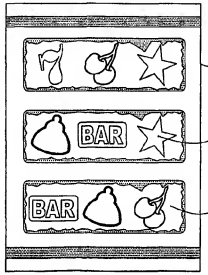

FIG. 1C

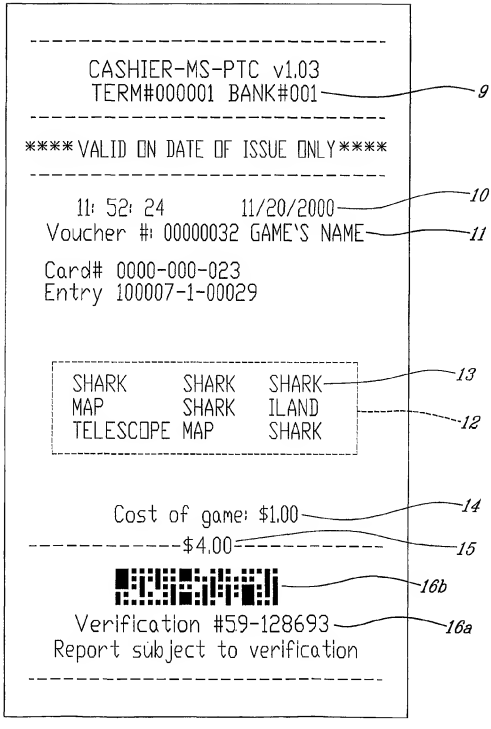
CASHIER-MS-PTC v1.03
TERM#000001 BANK#001
9
****VALID ON DATE OF ISSUE ONLY****
11:52:24 11/20/2000
10
Voucher #: 00000032 GAME'S NAME
11
Card# 0000-000-023
Entry 100007-1-00029
SHARK SHARK SHARK
MAP SHARK ILAND
TELESCOPE MAP SHARK
13
12
Cost of game: $1.00
14
$4.00
15
16b
Verification #59-128693
16a
Report subject to verification

FIG-2

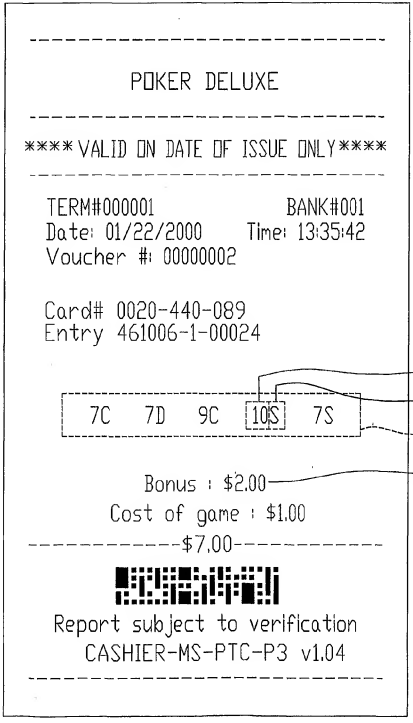
POKER DELUXE
****VALID ON DATE OF ISSUE ONLY****
TERM#000001 BANK#001
Date: 01/22/2000 Time: 13:35:42
Voucher #: 00000002
Card# 0020-440-089
Entry 461006-1-00024
7C 7D 9C 10S 7S
19
20
18
Bonus : $2.00
21
Cost of game : $1.00
$7.00
Report subject to verification
CASHIER-MS-PTC-P3 v1.04

FIG - 3

PAYOUT :	83.5%	22
DEAL SIZE:	5600	23

Tier	Symbols
Progressive	7,7,7
Tier #1	6,6,6
Tier #2	5,5,5
Tier #3	4,4,4
Tier #4	3,3,3
Tier #5	2,2,2
Tier #6	1,1,1
Tier #7	1,1,X
Tier #8	1,X,X

25 — 24

Tier	Total qty (27)	Singles (31)	Odds (28)
Progressive	1	1	500
#1	2	2	250
#2	3	3	50
#3	12	12	25
#4	20	20	10
#5	50	40	5
#6	125	75	3
#7	400	340	2
#8	1600	990	1

26

Combinations	Qty (30)	Odds
#8 #7 #5	10	8
#8 #8	100	2
#8 #8 #8	100	3
#8 #7	50	3
#8 #6	50	4

29

Fig. 4

Deal size	225,000
Cash out	93.74%
* progressive contribution	2.00%

39

Winning outcomes	prize	total qty
Royal flush	$1,199.00	2
Straight flush	$250.00	8
Four of a kind	$100.00	75
Full house	$50.00	300
Flush	$25.00	600
Straight	$10.00	1,250
Three of a kind no bonus	$5.00	6,500
Three of a kind w/ bonus (7's)	$5.00	823
Two pairs	$2.00	17,500
pair of Jacks or better	$1.00	60,00

32 33 35 36

Bonus outcomes	Bonus prize	Total qty
Three 7' with bonus 1*	$4,000.00	3
Three 7' with bonus 2	$250.00	5
Three 7' with bonus 3	$100.00	15
Three 7' with bonus 4	$50.00	50
Three 7' with nus 5	$25.00	100
Three 7' with bonus 6	$10.00	200
Three 7' with bonus 7	$7.00	450

34 37 38

Fig. 5

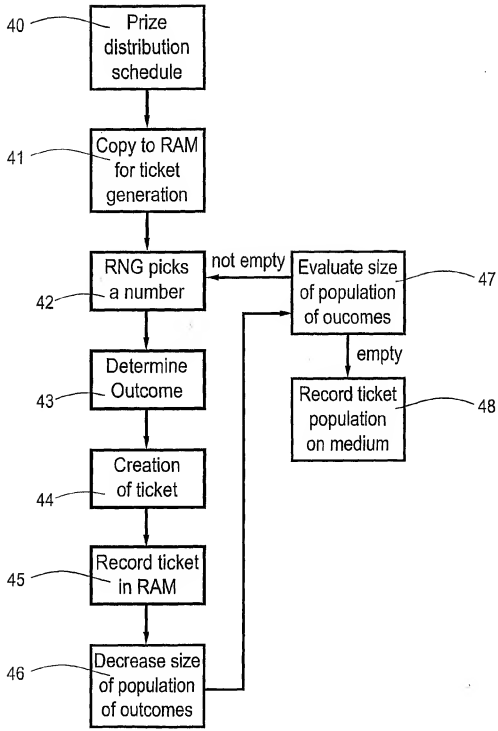
40
Prize distribution schedule
41
Copy to RAM for ticket generation
RNG picks a number
42
not empty
Evaluate size of population of oucomes
47
empty
Record ticket population on medium
48
Determine Outcome
43
Creation of ticket
44
Record ticket in RAM
45
Decrease size of population of outcomes
46

Fig. 6

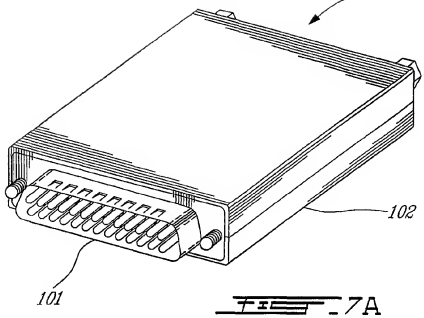

FIG. 7A

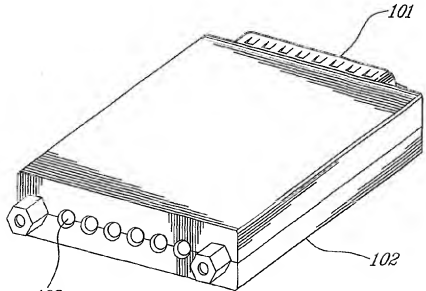

FIG. 7B

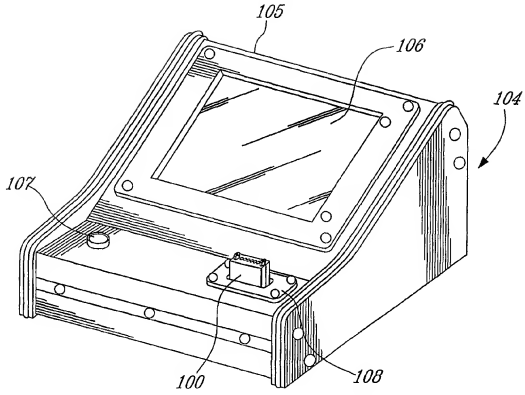

FIG. 8A

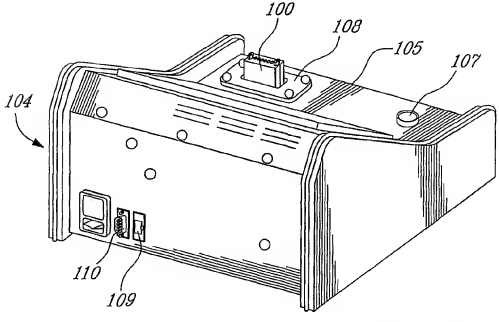

FIG. 8B

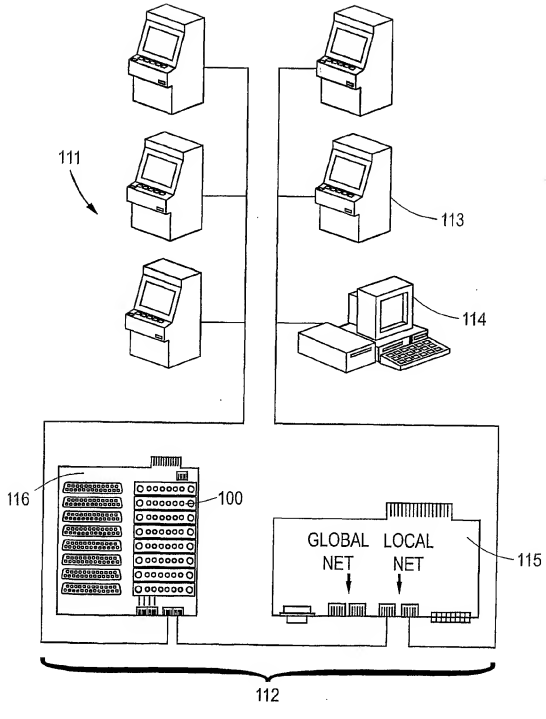

Fig. 8

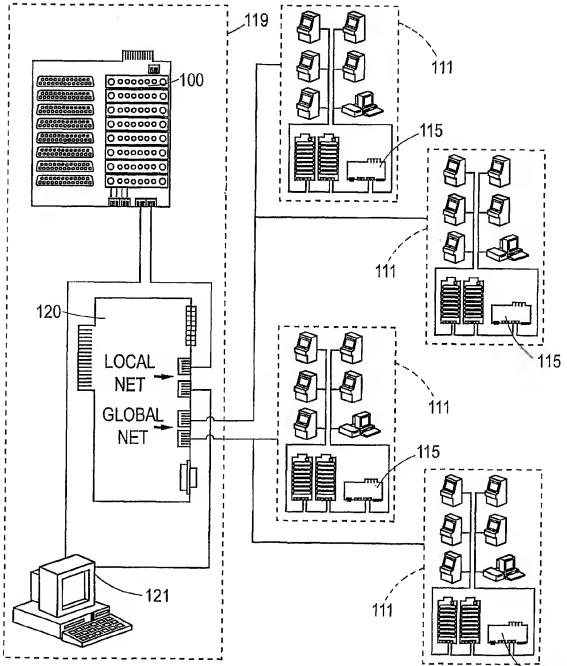
119
100
111
115
111
115
120
LOCAL
NET
GLOBAL
NET
111
115
111
115
121

FIG. 10

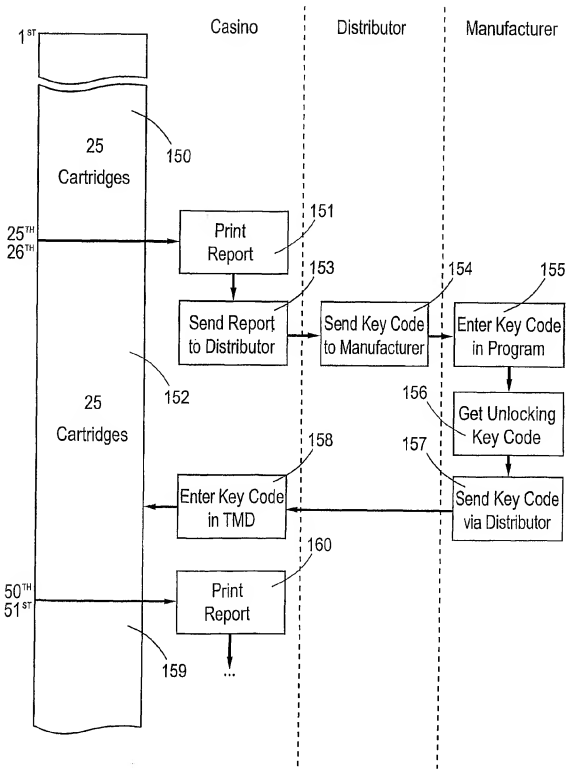
Casino
Distributor
Manufacturer
1ST
25 Cartridges
150
25TH 26TH
Print Report
151
Send Report to Distributor
153
Send Key Code to Manufacturer
154
Enter Key Code in Program
155
25 Cartridges
152
Get Unlocking Key Code
156
157
Send Key Code via Distributor
Enter Key Code in TMD
158
160
50TH 51ST
Print Report
159
...

FIG - 11

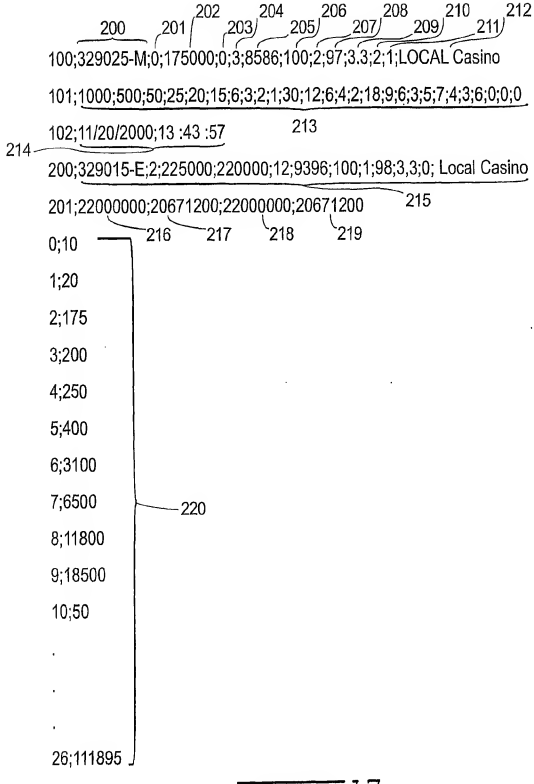
200
201
202
203
204
205
206
207
208
209
210
211
212
100;329025-M;0;175000;0;3;8586;100;2;97;3.3;2;1;LOCAL Casino
101;1000;500;50;25;20;15;6;3;2;1;30;12;6;4;2;18;9;6;3;5;7;4;3;6;0;0;0
102;11/20/2000;13 :43 :57
213
214
200;329015-E;2;225000;220000;12;9396;100;1;98;3,3;0; Local Casino
215
201;22000000;20671200;22000000;20671200
216
217
218
219
0;10
1;20
2;175
3;200
4;250
5;400
6;3100
7;6500
220
8;11800
9;18500
10;50
26;111895

Fig. 12

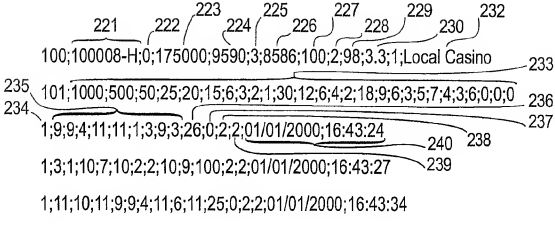
221
222
223
224
225
226
227
228
229
230
232
100;100008-H;0;175000;9590;3;8586;100;2;98;3.3;1;Local Casino
233
235
101;1000;500;50;25;20;15;6;3;2;1;30;12;6;4;2;18;9;6;3;5;7;4;3;6;0;0;0
236
234
237
1;9;9;4;11;11;1;3;9;3;26;0;2;2;01/01/2000;16:43:24
240
238
1;3;1;10;7;10;2;2;10;9;100;2;2;01/01/2000;16:43:27
239
1;11;10;11;9;9;4;11;6;11;25;0;2;2;01/01/2000;16:43:34
.....

Fig. 13

Daily Multi-site Jackpot Report

Casino Name

Date of the report

Date of last reset

		300	
Primary tickets played ($)		301 $5.00	302
Cost of tickets	+	303 93.84%	$4.69 304
License fee for tickets	+	2.00%	$0.10 305
Contribution from qualifying	+	306	$150.00 307
Contribution from primary	+	1.00%	$0.05
			308
Won multi-site jackpot	-		$0.00 309
Redeemed from Cashiers	-		$0.00
			310
Net due distributor for multi-site jackpot			$154.84

FIG - 14

Daily Machine Statistics Report

Casino Name

Date of the report

Date of last reset

# Machine	1	311
Ticket played	75	312
Winning Tickets	32	313
Losing tickets	43	314
Total $ played	$75.00	315
Total $ win	$65.00	316
Total $ unclaimed	$0.00	317

Fig. 15

Daily Cartridges Statistics Report

Casino Name

Date of the report

Date of last reset

Cartridges	32	318
Players	125	319
Average tickets/players	54	320
Winning tickets	2485	321
Losing tickets	4265	322
Total tickets	6750	323
Win %	36.81%	324
Total $ played	$6750.00	325
Total $ win	$6513.08	326
Payback %	96.49%	327

Fig. 16

Daily Multi-site Jackpot Stastistics Report

Date of the report
Date of last reset

Casino Name

Primary tickets played ($)		$5.00	
Cost of tickets	+	93.84%	$4.69
License fee for tickets	+	2.00%	$0.10
Contribution from qualifying	+		$150.00
Contribution from primary	+	1.00%	$0.05
Won multi-site jackpot	-		$0.00
Redeemed from Cashiers	-		$0.00
Net due distributor for multi-site jackpot			$154.84

328

Casino name

Primary tickets played ($)		$12.00	
...			

Totals 15 sites

Primary tickets played ($)		$325.00	
Cost of tickets		93.84%	$304.00
License fee for tickets	+	2.00%	$6.50
Contribution from qualifying	+		$1105.26
Contribution from primary	+	1.00%	$3.25
Won multi-site jackpot	-		$524.50
Redeemed from Cashiers	-		$0.00
Net due distributor for multi-site Jackpot			$895.49

329

FIG - 17